



EFFECTIVE CRISIS RESPONSE THROUGH MAPPING PREPAREDNESS

CASE STUDY: HURRICANE TOMAS, SAINT LUCIA *Importance of good base data before responding*

The few days following a disaster are critical for the affected population. Responders need to know where the affected area is, who is affected, what infrastructure is damaged, and what relief efforts are occurring or needed. MapAction has been helping relief agencies since 2004 to gather this crucial information, and are helping to pass on their experience to national disaster agencies, NGOs and Red Cross/Red Crescent Movement.

MapAction has many valuable lessons that can help these agencies be prepared for emergency response mapping in turn decreasing suffering of affected populations and increasing their resilience for the future. These include:

- **Having a good set of basemaps and information shared amongst responders before disaster strikes,**
- **Having local skills in mapping and information management,**
- **Using templates and standard procedures speeds up the ability to make good maps,**
- **Maps help responders make a common picture of a disaster, the area affected and where relief efforts exist.**

This is one of a series of case studies to show why these learning points help organisations become more resilient in emergency preparedness.



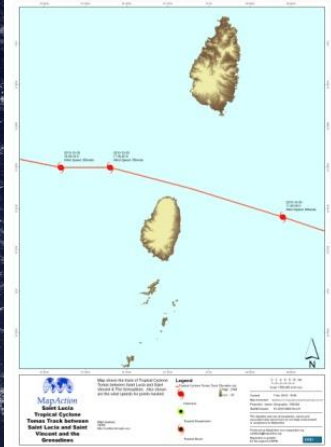
AREA: Saint Lucia, Caribbean

DISASTER: Hurricane

YEAR: 2010



© NASA/MODIS Rapid Response System



Track of Hurricane near St Vincent and St Lucia

Hurricane Tomas moved through the Caribbean islands in late October 2010. Saint Lucia was the worst affected island as Tomas crashed through the Lesser Antilles chain. Fifteen people died as the hurricane caused devastation right across the island. Landslides blocked roads, cutting off many settlements. Agriculture was devastated, threatening rural livelihoods. A national disaster was declared at the start of November.

The National Emergency Management Office (NEMO) in St Lucia asked for MapAction assistance and a volunteer was scrambled to travel there next day.



NEMO had been part of a Caribbean Development Bank funded project a few years earlier. In association with the Caribbean Disaster and Emergency Management Authority (CDEMA), the University of the West Indies (UWI) had been commissioned to create risk and hazard mapping of the island.



UWI had created a comprehensive base map data set and permission was granted by NEMO to use it. The data were handed over to the MapAction member who was deploying on departure from the UK. It included detailed elevation, coastline, roads and tracks, settlement areas and detailed population from the last census.



The storm caused floods, road collapses, landslides and infrastructure damage .
 [© NEMO, Ministry of Finance, Economic Affairs, Planning & Social Security, MapAction]

The MapAction volunteer was able to quickly overlay information about the situation and accurately locate the areas of landslides, the roads that were cut off, the emergency shelters, and later which agencies were working in different areas to fix the infrastructure and provide relief to the affected population.

KEY LEARNING POINTS

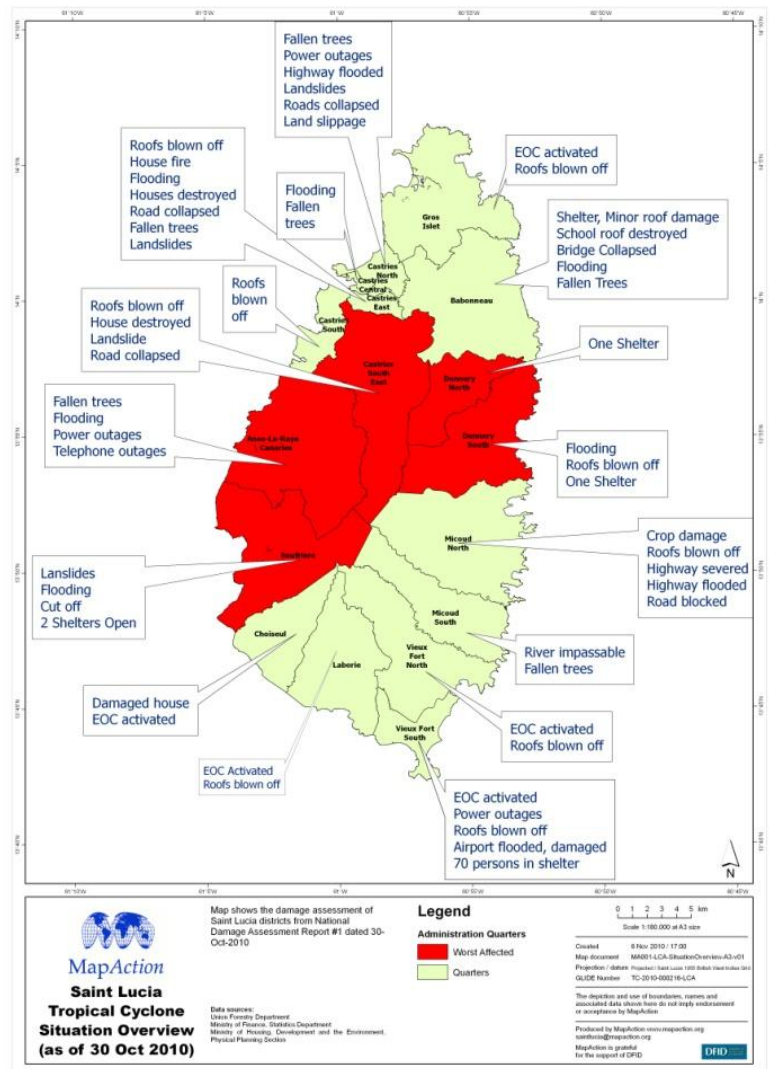
The advantage of having good base mapping data from the very start of the emergency deployment was demonstrated in St Lucia.

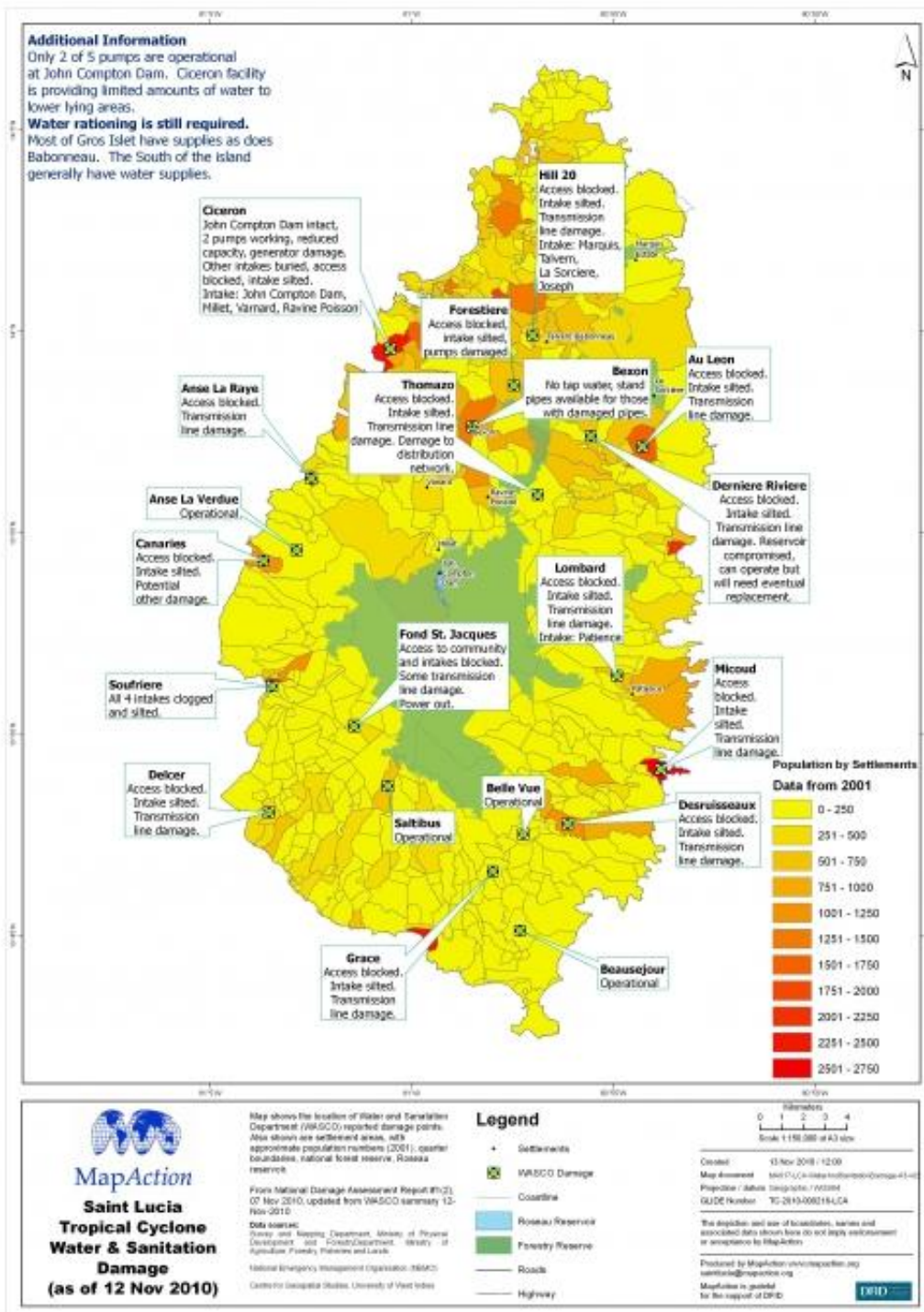
The first map produced (*right*) helped responders understand that the emergency effectively split the country in two. The detail of the mapping available:

- Improved the quality of the maps,
- Allowed places that were identified in reports, phone calls and texts to be located easily on a map,
- Allowed situation data to be combined with knowledge of populations before the emergency, helping to compare the impact of the emergency against the total population.

If this detailed data had not been available, the response effort might have been impeded by:

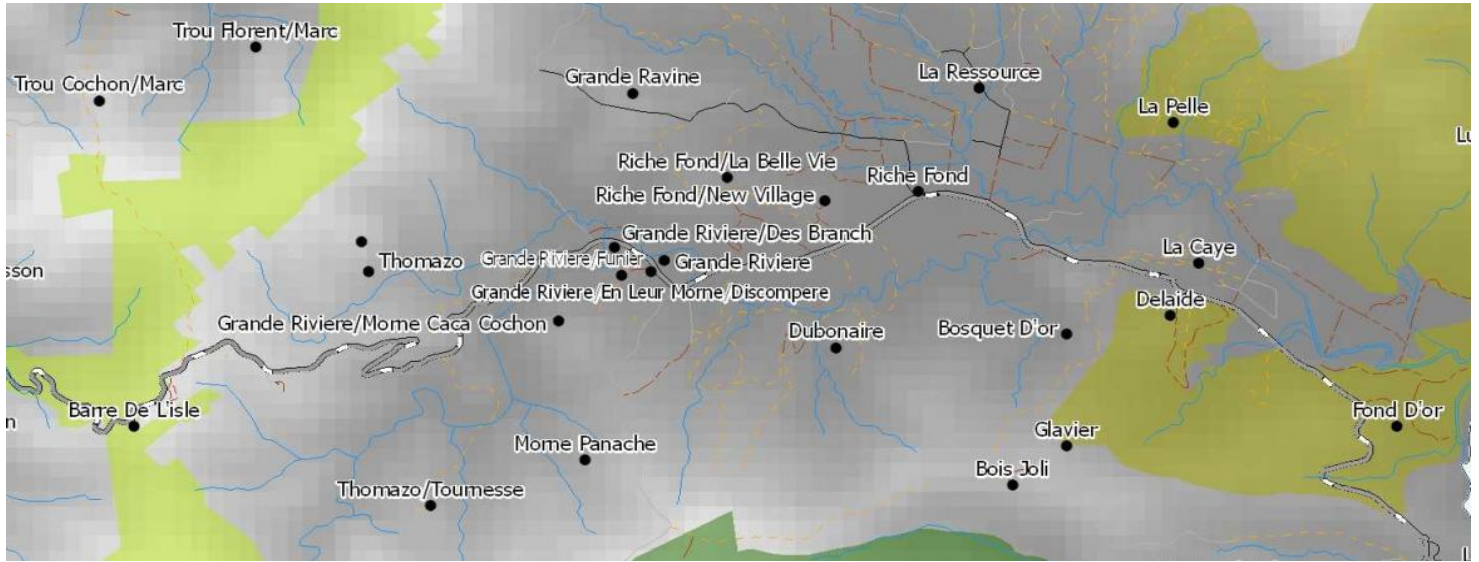
- Not being to find specific locations in reports
- Misrepresenting areas or locations where landslides existed; which may have confused the responding agencies on the ground
- Allow assessors to emphasise some individual incidents or figures of affected population over others without knowing the total population distribution across the island.





The detail of enumeration districts allowed the mapping to show totals of baseline population for every single settlement in St Lucia (above). The MapAction volunteer was able to overlay the population map with information about damage to water and sanitation infrastructure very easily.

This map is a good example of how the combination of detailed background data (coastline, boundaries) and baseline information about the country (population) obtained before the emergency with situation data (state of damage) obtained during the emergency can be shown clearly on one map for decision makers and the wider public.



Above is a map detail of one valley showing the placenames, roads, tracks and elevation. Having such detailed information about the location of places allows responders to locate reports of damage, blocked roads (see *right*) or people in need. The distance from west to east on this map is less than 15km.

The MapAction volunteer said at the end of mission "We could not have done half of what we achieved without the quality of mapping we had available from day 1".



At the end of the mission, all the maps and data created by MapAction were handed back to NEMO and the Ministry of Physical Development, Housing and Urban Renewal. It's important that given how time consuming it is to create data and keep it up to date that local agencies with GIS and mapping capacity share their datasets. Since the mission, St Lucia have developed a website with the World Bank to share data (called the SLING or St. Lucia Integrated GeoNode).

This should enable key agencies in St. Lucia and their partners to have access to good base data going forward. Sharing existing data is only the first step too; it is hoped the community of data providers can keep the key datasets up to date.

Partner Organisations

National Emergency Management Organisation (NEMO)

<http://www.nemo.gov.lc/>

Ministry of Physical Development, Housing and Urban Renewal

<http://www.govt.lc/ministries/physical-development-housing-and-urban-renewal>

Contact MapAction

Web: www.mapaction.org

Email: info@mapaction.org

Tel: +44 (0)1494 56 88 99

Address: The Clare Charity Centre
Wycombe Road
Saunderton
Buckinghamshire
HP14 4BF
United Kingdom